

Proposal Reviews

#233: Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.

US Fish and Wildlife Service, California-Nevada Fish Health Center

Initial Selection Panel Review

Research and Restoration Technical Panel Review

Sacramento Regional Review

External Scientific Review

#1
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Environmental Compliance

Budget

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP Initial Selection Panel Review

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.

Please provide an overall evaluation rating.

Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

Consider as Directed Action in Annual Workplan (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)

Not Recommended (a proposal not currently recommended for funding-after revision may be considered in the future)

Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

Fund	
As Is	-
In Part	-
With Conditions	-
Consider as Directed Action	-
Not Recommended	X

Amount: **\$0**

Conditions, if any, of approval (if there are no conditions, please put "None"):

none

Provide a brief explanation of your rating:

External reviews indicate that the conceptual framework for the proposed study is not well developed. In addition to this weakness, the proposal team should have coordinated their study with the considerable effort ongoing in the Upper Yuba River Studies Program. Selection panel does not find this proposal adequately developed and recommends it not be funded.

Research and Restoration Technical Panel Review:

CALFED Bay-Delta 2002 ERP PSP Research and Restoration Technical Panel Review Form

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;

Above Average: Quality proposal, medium or high regional value, and no significant administrative concerns;

Adequate: No serious deficiencies, no significant regional impediments, and no significant administrative concerns;

Not Recommended: Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	The proposal meets a clear need to develop baseline information about pathogen issues that are usually ignored in fish survey work and most reviewers rated the project high on the technical merits. A clear hypothesis is missing but in this case, insufficient general data may exist to advance more specific hypotheses, therefore a more general baseline approach is justified. The techniques are well defined although the rationale for field design and effort is weak. The project lacks the level of contact needed with the many other activities in the basin to insure coordination and avoid conflict. If coordination can be implemented before field work begins and questions about CESA permit costs resolved, then this project is fully justified.
XAbove average	
-Adequate	
-Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

The general goal of improving knowledge on fish health and pathogen infection rates is important and justified as a baseline approach. The proposal appears to have other secondary goals which are not clearly stated yet have bearing on the structure of the project design. The conceptual model for much of the work is weakly developed. For example, is the Yuba River disturbed and therefore fish more susceptible to infection? The justification for some of the work is diffuse and could be more clearly developed once survey data are obtained.

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

There are minor concerns with details of some techniques but confidence that the proponent can obtain the data on pathogens and fish health from the fish collected. There is strong evidence of expertise in the methods of analysis but less so on the field level design of sampling. Inclusion of non-native fish is an important consideration. There is concern, however, that the rationale for upstream stations and repeat sampling is weak and may provide little additional information for the work involved. The statistical model not clearly presented for analysis of data.

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

At the survey level, this project has potential to make a significant advance in knowledge about the role or extent of pathogens in this river basin. Less information will result from specific factors such as mercury, land use, or water quality conditions. But these factors should become clearer after the 2 years of survey work.

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

The costs are reasonable for the survey level of expected results. The benefits of one station on each major fork or a second year of repeat sampling need better justification. The contribution of other funds enhances the value.

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

The Regional Review ranked this project LOW. Better coordination with other projects in the basin is required. Although information on pathogens, including those among non-native species is important, lack of formal hypotheses is troubling.

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

There were no funds identified for compliance with environmental permits and compliance. The budget lacked details on overhead and it needs a statement on State Standard Contract Provisions.

Miscellaneous comments:

Technical reviewers generally supported the need for this kind of work and noted it is usually missing in most monitoring or fish population assessments. Questions about the justification for some aspects of the project suggest that the more hypothesis-driven elements are so incomplete as to be detractors from the baseline approach.

Sacramento Regional Review:

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.

Overall Ranking: ☒Low ☐Medium ☐High

Provide a brief summary explanation of the committee's ranking:

This effort could compliment actions in both the Upper and Lower river. As a research effort this proposal needs a hypothesis and a contingency plan for sampling. Also, it was wondered whether or not natural fish designation could be made.

1. Is the project feasible based on local constraints?

☒Yes ☐No

How?

Permitting for take of spring-run and steelhead may be a hurdle, but everything else is feasible.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

☒Yes ☐No

How?

Project addresses non-native pathogens and their link to salmonids, PSP priority MR-1, and should generate information beneficial to restoration of at-risk species, MR-6.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

☐Yes ☒No

How?

Proponent is looking to coordinate with all existing and future efforts.

4. Does the project adequately involve local people and institutions?

☐Yes ☒No

How?

Coordination with various entities will have to occur in this project for it to be successful.

Other Comments:

X

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: **Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
X Excellent	Excellent in technique, qualifications and cost.
-Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

Goals is to assess the fish health in Yuba River. The hypothesis is clearly stated and important.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

Studies are currently evaluating feasibility of introducing wild fish to upper Yuba River. The proposed study will assess disease in the lower river. This information is important in making decisions on restoration of the upper river. In addition knowing health of the lower Yuba river stocks is inherently important in understanding the response to populations to

restoration measures.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approaches are excellent and the study will add significantly to the base knowledge. It will be useful and important. If fish health is low, restorations efforts will be compromised. If fish do not respond to restoration activities, such as temperature control, and the fish health is unknown then it would be impossible to ascribe a lack of response to the restoration action. Such issues are confronted in Columbia River salmon restoration.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

The approach is fully documented, Likelihood of success is high. The project will provide a snapshot of disease in the system.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

Performance was not specifically noted but the expected performance is well documented in terms of samples to be collected, statistical requirements of sampling, and sampling locations. The detail is sufficient.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

The study will provide a snapshot of the current pathogen presence and potential for the organism to infect specific fish species. These products are very important and will provide information to address disease problems at this time. The project is a baseline and future studies are recommended.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

Applicant is highly qualified. The Fish Health Center has the necessary infrastructure for the study.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

The cost of this very small and the benefit is great. The work is adequate to produce the snapshot of fish health.

Miscellaneous comments:

This is an excellent and valuable project. It has no weaknesses that I can find.

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: **Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	The project is a mixture of survey and identification of causes that does not meet the needs of either approach very well. A one year general survey of pathogens and fish health could be useful for a more focused project that would have potential to provide answers to questions raised in the proposasl.
-Good	
XPoor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The goals and objectives are unclear. Ideas appear in various places in the proposal which seem to be part of the project but are not explicitly considered by hypothesis or objective. The structure of the project is a weak mix of survey and broad objectives that are poorly related to the structure of the study design.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The major justification is that little information about pathogen infection rates and general health of fish populations exists for many streams. However, other elements such as the role of hatchery fish, the longitudinal distribution of infection or the association of infection/health with levels of disturbance are weakly tied to the structure of the project. By spreading effort over 5 stations, many species, and many unconnected objectives, the project lacks cohesion. The rationale for three upstream stations midway along the three forks or for a repeat of everything a second year has scant justification.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The project will provide a general scoping level of health statistics for portions of the Yuba River. However, the proposal mixes general survey level of screening with additional components that vaguely are supposed to answer more specific questions. These latter components are poorly structured to answer these questions and can provide little quantitative or explanatory results. For example, the proposal makes reference to analysis of variance and regression as means to summarize the data. But nowhere is a dependent variable explicitly defined and combining the various measures of health would seem a complex proposition. Independent variables are even less clear. The project suggests mercury, four rather weak chemical measures, location, hatchery stock and a long additional list of factors with no measure (logging, dams, mining, agriculture) or consideration of their role in the study design. The choice of three "upstream" stations are selected presumably to just be a place to capture "non-salmonids" (although rainbow trout are featured) and connect to a fuzzy notion that problems with pathogens may be less severe upstream in the cool water areas. There is no reason why one station from three forks has any justification rather than three stations from one fork (the objective gives no hint). There is no explanation of why two years of repeat work has value. As an initial effort to gather data on general health and pathogens, one year would give most of the information and could be used to fashion a structured project. A suggestion that the project might also provide useful data on resident fish population structure for later monitoring is completely without foundation.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

The investigator clearly has expertise in the assessment of fish health that is rarely included in the monitoring of populations. The techniques seem well justified and clearly show a familiarity with the literature and expertise in application. But absent a much more sharply defined study design, the data will provide a low level of information return. The scale of the project (stations and years) is poorly justified by a screening-level project.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

The proposal lacks description of why a 5% infection detection rate is a criterion for the study other than the sample size needed. Weakness in how data will be summarized makes judging performance difficult. It is unclear how the project will provide much more than an estimate of the frequency of various pathogens or health indices for a small sample from various species at isolated locations.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

The project will likely produce a survey level of pathogens at some locations on the Yuba River system. Without more focus on a clearly defined issue and structure of the study, the outcomes will be weak. The project would be of much more value if it were focused on a clearly defined issue, and effort and study design matched accordingly--mercury contamination, hatchery fish, longitudinal infection rates, etc--pick one.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

The proponent clearly has the expertise in fish pathology and relevant health analytical techniques. The lack of a structured study design suggests a need for assistance in this dimension of project development.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

The costs are relatively small for two years of work--given matching that is involved--but the justification for three upstream stations and two years of repeat work is absent. The benefits from the current scope is doubtful. The benefits from a one-year broad survey of the Yuba to obtain insights on fish health or general rates of infection are worthwhile.

Miscellaneous comments:

The project could be substantially improved by either focusing on a fast general screening of fish over the basin or a focus on some problem such as that tied to mercury (for which some base of exposure/body burden is known) with attendant attention to statistical analysis and formal hypotheses.

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: **Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.**

Conflict of Interest Statements:

I have no financial interest in this proposal.

☒Correct

☐Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	This is an important piece of work, and it appears that the PI is capable of doing the study. However, there was rather poor development and explanation of the techniques involved.
XGood	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The goals and objectives are clearly stated, but no specific hypotheses were evident. This is largely a data gathering, baseline, sort of proposal. It is not testing a specific hypothesis

The concept is timely and important, because it will generate important, baseline data that are important in future management and development decisions.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

It is clear that the PI has a good grasp of the current literature and has set the proposal relative to what is known at present. I didn't see any conceptual model, but I don't think that this work needs one.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approach is a reasonable one, but the PI is not very specific about how various analyses are going to be performed, and why they are important. For instance, determination of pathogen presence is obviously important, but why sample gill Na,K-activated ATPase, which the author terms gill ATPase on pg. 8. The PI should tell the reader why this is important, if it is, and should demonstrate that she knows the difference between various ATPases. In addition, on page 8, what does the PI mean by "clinical signs of mercury toxicity."

Also on pg. 8, it is unclear to me (using the map in the proposal) where the 3 major areas are in the watershed.

On pg. 12, the PI does not make clear if she actually knows what the ELISA will measure. Does she know what an ELISA is?

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

I think that the approach is well described, with the exceptions noted, and technically feasible. Since the data are merely baseline, I don't see any problem or poor chance of success. The scale of the project seems OK.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

Since this is not a restoration project, performance measures are a bit more difficult to define. I suppose the performance measure will be the clarity and size of the data set that is generated.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

I don't know of any product that will be produced.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

Past funding suggests some capabilities, but there is no list of past publications or reports that would tell the reader if past research has generated publishable or important data.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

The budget seems reasonable.

Miscellaneous comments:

I am used to reviewing NSF, NSERC, etc. grants, not those from your agency, so I may have been a bit harsh on the technical aspects.

External Scientific: #4

Research and Restoration External Scientific Review Form

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: **Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None, nada, zip, zilch...

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
X Excellent	This shouldn't be necessary if you've read my comments above. In short, the question is scientifically appropriate and will yield high priority information for CALFED, methods are appropriate, investigators are well qualified, and the budget, while appropriate, represents a bargain for Calfed.
-Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The goal of this proposal is to evaluate how pathogens affect both game and non-game fishes in a California river, as well as assess whether transmission of pathogens occurs via straying of hatchery fish. The proposal addresses a subject of great relevance to the Calfed program as well as one that is of interest to aquatic conservation biologists in general. In fact, pathogens are starting to be recognized as having a significant impact on the structure of aquatic assemblages (e.g. salmon stocks vs. endemic pathogens in NW rivers, amphibians & chytrids, etc.) in many natural systems. The proposal's goals meet all of criteria listed in the question above (e.g. clearly stated, internally consistent, etc.), and although I would not regard the conceptual development as innovative it is timely and meets a pressing need.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

I would answer yes to all of these questions (see above, because goals are really not independent of a project's justification).

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

Here I am of limited help, because I am a fish ecologist and not a pathologist. Hence I really cannot comment on assays, etc., although I can say that the experimental design seems appropriate for the questions that are being asked. I'm fairly certain that the ecological citations in the proposal are innaccurate and they are out of date, however, the authors' statements could easily be backed up by other papers. I don't recall Weins 1977 saying anything about stream fish communities being strongly affected by variation in reproductive success driven by changes in flow (although Grossman et al 1982 Amer. Naturalist goes into this in great detail as does Moyle and Li 1979 AFS Predator-Prey Symposium). Similarly I don't believe that Stearns 1976 says anything about "resident fish species" of the california foothills -- this is a general paper on life history theory in animals. I add these comments because although they do not compromise the overall points made, they do indicate either that the authors are not familiar with the literature or have been sloppy. These are not impressions that a proposer wants to leave with a referee.

It is good that the authors will address non-salmonid fishes as reservoirs for pathogens. They should also note that most of the fishes listed for the Yuba are introduced (e.g., centrarchid basses and sunfishes, catfish, etc.)

The review of potential diseases appears to be thorough.

The authors should consult - Erickson, D. et al. 1985. The relative gonadal index: an alternative index for the quantification of reproductive condition. Comp. Biochem. Physiol. 81A:117-120 for discussion of the problems associated with organosomatic indices -- perhaps an alternative like the RGI would be appropriate.

Timing of sampling appears well planned, although their sample sizes should be increased to provide more information (see below).

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

I think that the approach is highly feasible and given the past history of the investigators - success is highly likely. Scale is appropriate.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

Yes, the assays are appropriate, as are sampling methodologies. The laboratory analyses should enable the PI's to clearly answer the questions posed regarding health and general condition of salmonid and non-salmonid fishes in this system and gain insights into possible transmission agents. With a slight increase in sample size, the author's could stratify samples by size, age or sex, which would yield important additional information regarding both transmission and heterogeneity within these fish populations. In fact, sampling should be conducted with a field biologist who is familiar with sampling these specific populations (Cal. F&G) to ensure that sufficient numbers of fishes are obtained.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

See above.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

The vita format for these proposals should be expanded, because it is hard to assess the PI's qualifications. Ms. True's academic training is not extensive, but I doubt that she would have been chosen to edit the USFWS Health Procedures Manual if she wasn't highly competent. Consequently, it appears that her capabilities are high for this project.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

This project is a bargain.

Miscellaneous comments:

Environmental Compliance:

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

☒Yes ☐No

If no, please explain:

CESA compliance as described on page 19.

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

☐Yes ☒No

If no, please explain:

No funds or time are allocated for environmental compliance permitting/ documentation.

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

☐Yes ☒No

If yes, please explain:

Other Comments:

Budget:

Proposal Number: 233

Applicant Organization: US Fish and Wildlife Service, California-Nevada Fish Health Center

Proposal Title: Health Monitoring of Natural Chinook, Steelhead, and Non-salmonid Fish Populations in the Yuba River.

1. Does the proposal include a detailed budget for each year of requested support?

☒Yes ☐No

If no, please explain:

2. Does the proposal include a detailed budget for each task identified?

☒Yes ☐No

If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

☐Yes ☒No

If no, please explain:

OH rate specified, however, component details not provided.

4. Are appropriate project management costs clearly identified?

☒Yes ☐No

If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

☒Yes ☐No

If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

6. Does the budget justification adequately explain major expenses?

☒Yes ☐No

If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes ☒No

If yes, please explain:

Other Comments:

Verify that applicant can comply with State Standard contract provisions, specifically 10% retention.